

ENVIRONMENTAL MANAGEMENT PLAN

1. INTRODUCTION

The Environmental Management Plan (EMP) has been formulated and integrated with the mine planning to mitigate the adverse impacts which are likely to be caused due to the mining operation and for overall scientific development of local habitat. The EMP has, therefore, been developed considering its implementation and monitoring of environmental protection measures during mining operations.

The aims of EMP are:

- Overall conservation of environment in integrated manner.
- Scientific, systematic & sustainable mining.
- To ensure the extraction of soil in eco friendly manner.
- Prevention and control of Pollution due to proposed project.
- Safety, welfare and good health of the work force.
- Protection and restoration of the ecological system.
- Protection of bridges and other structure etc.
- Ensure effective operation of all control measures.
- Monitoring of cumulative and long term impacts.

2. PROJECT DESCRIPTION

The proposed project is Ordinary Soil excavation project is 1.47 hectare. The Project site is located at Mauza- Janjira Ismailpur, Block- Hajipur, District- Vaishali, Bihar. The excavated Ordinary Soil will be use for filling and leveling purpose.

3. ANTICIPATED IMPACTS AND MITIGATION MEASURES

The pollution potential of the proposed project, its possible impacts on the surrounding environment during operational and post-operational phases and the necessary management actions proposed to control and abatement of pollution are furnished hereunder.

Most of the developmental activities generate environmental problems, but people do not give due regard and attention to those problems. The question to be addressed with regard to

environmental issues of ordinary soil excavation pertains to conservation of minerals on the one hand, and the environmental problems on the other. Depending on the location and the type of excavation, the magnitude and the importance of environmental impact would vary. The impacts can be broadly classified into four categories:-

(1) Impact on Land

(2) Impact on air Environment

(3) Impact on Noise Environment

(4) Impact on Biological Environment

The first three impacts are often categorized collectively as physical impacts. All these impacts need to be addressed properly to minimize the associated impacts. Depending on the nature of activities and environmental screening, the impacts have been identified for their importance. Mitigating & monitoring requirement are focused in the Environmental Management Plan for countering or minimizing the potential environmental impacts associated with Ordinary Soil excavation. Impact on various environmental parameters and likely mitigation measures to be adopted are described below

3.1 AIR POLLUTION

3.1.1 Anticipated impacts

Although ordinary soil excavation does not cause any direct change in air environment, transportation could cause atmospheric pollution. In Ordinary Soil excavation operations, the source of air pollution may cause deterioration of air quality due to the fugitive dust emission during scooping, loading-unloading operations, of ordinary soil and transportation. Loading and unloading of ordinary soil would be associated with the fugitive emission in the active area whereas fugitive emission during transportation would affect the areas/villages situated adjacent to road side. Another source of air pollution would be emission from the trucks/tractor vehicles to be used for transportation of Ordinary Soil.

3.1.2 Mitigation Measures:

3.1.2.1 For Fugitive dust Emission:

- i. All trucks tractors will be covered by tarpaulin to prevent dust emission.
 - ii. Water will be sprayed after loading activity (if Ordinary Soil would be in dry condition)
 - iii. The dust suppression measures like water spraying will be done on the excavation site.
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- iv. Overloading of trucks and trolleys will be prevented.

3.1.2.2 For Vehicular Emission:

- i. Vehicular emission can pose serious health hazard. During the Ordinary Soil excavation, tractor/truck would be used for transportation. Tractor/truck comprises of diesel engine produce particles are dangerously fine of PM10 & PM2.5. It is well known fact that combustion of diesel generates small particulate matter, nitrogen oxides and sulphur dioxide (NO₂, SO₂).
- ii. Ultra low sulphur diesel would be used in vehicle. CPCB prescribed emission Standards for the vehicle would be followed.

3.2 LAND ENVIRONMENT

Ordinary Soil excavation is the process of scooping of Ordinary Soil that actively supports the agricultural activities of an area. The entire process is a kind of man made erosion of materials otherwise segregated by the Mother Soil through its geologic processes. The top Ordinary Soil is usually fertile in nature. The surface (top) layer is several folds richer in N, P, K and other micro-nutrient elements than subsurface layers. But according to some farmers of the region, the top Ordinary Soils of certain areas of the agricultural land are unsuitable for agricultural activity. But the subsurface layers seem to be more fertile and good for cultivation. In such cases, removal of a layer or two from the surface would be a beneficial act.

3.2.1 Anticipated impacts

The major impacts of Ordinary Soil excavation on land are changes in land stability and Ordinary Soil loss. Due to continued and unscientific Ordinary Soil excavation, pits of different dimensions would be formed in the affected areas. The irregular shape of ponds created in random locations due to indiscriminate Ordinary Soil excavation may lead to land stability problems in the adjoining areas.

3.2.2 Mitigation measures

- i. Ordinary Soil excavation depth will be limited to 2.0 m along the topography. Only from the surface.
 - ii. No foreign material like polythene bag, jute bag and useless articles should be allowed to
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remain/spill on the land, or no pits/pockets will be allowed to be filled with such material.

- iii. Excavation will not exceed beyond the agreed extraction depth.
- iv. No open bore hole is left.

3.3 NOISE ENVIRONMENT

3.3.1 Anticipated impacts

As far as noise pollution is concerned, Ordinary Soil excavation does not contribute much to noise pollution, except the noise generated from the vehicles that transport excavated Ordinary Soil from the lands. Noise level in the working environment is compared with the standards prescribed by Central Pollution Control Board which has been adopted and enforced by the Govt. of India through The Noise Pollution (Regulation and Control) Rules, 2000.

3.3.2 Mitigation measures

- i. Well maintained vehicles will be used in order to reduce the noise during movement of vehicles.
- ii. Regular and proper maintenance of transportation vehicles (trucks, tractor etc) would be ensured.
- iii. There would be restriction on vehicular movement during nighttime.

3.4 BIOLOGICAL ENVIRONMENT

The area where Ordinary Soil excavation is practiced which are generally devoid of any natural vegetation. The magnitude of which is proportional to the area under brought under reclamation. There will not be any impacts on the biological environment in the surrounding area. The land returned to a form and productivity in conformity with a prior land use plan including a stable ecological state that does not continue substantially to environmental deterioration and is consistent with surrounding aesthetic value.

3.4.1 Conservation and Protection of Flora & Fauna

Ordinary Soil excavation from the project site will not have any ecological impact. No endangered and rare species of flora and fauna are found at the project site. The

implementation for development of green belt will be of paramount importance as it will not only add up as an aesthetic feature, but also act as a pollution sink.

- The species to be grown in the area should be dust tolerant and fast growing species.
- Apart from the green belt and aesthetic plantation for elimination fugitive of emission and noise control, all other plantation efforts shall be decided and executed with the assistance and co-operation of the local community.

3.5 SAFETY MEASURES DURING EXCAVATION

- Train the staff and other workers on safety measures and conduct safety drills to educate them.
- First-aid facilities would be provided to the laborer at the project site.
- Conduct safety programs to create safety awareness among workers/staff.

3.6 ENVIRONMENTAL MANAGEMENT PLAN IMPLEMENTATION

Environmental Management Plan serves no purpose if it is not implemented with true spirit. Thus, an implementation and monitoring programme has to be prepared. Implementation of proposed control measures and monitoring programme has an implication on the surrounding area as well as for the region. Therefore, Ordinary Soil excavation management should be strengthen the existing control measures as elaborated earlier in this report and monitor the efficacy of the control measures implemented within the Ordinary Soil excavation area relating to the following specific areas:

- Regular visual examination will be carried out to look for possibilities of erosion. Any abnormal condition, if observed should be taken care of.
 - Examination of noise levels at excavation site, stationary and mobile sources, and adjacent villages would be done.
 - Conduct environmental awareness program to the workers, supervisory staff and contract laborers during the excavation period.
 - Recommend necessary measures to improve Environmental conditions.
 - No need of temporary toilets as the workers will be hired from the nearby villages.
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3.7 Solid Waste Management

Disposal of packing material, carried by the workers at the project site. This packing material would include used sachet/gutka/pan masala pouches. Polythene bag used by the workers to bring their foods etc. would be separately stored in bins and managed as per applicable Solid Waste Management Rules.

3.8 Information Record

- Daily data of Ordinary Soil excavation at the project site would be recorded in the register by the supervisory staff.
- Number of employed workers would be entered in the register by the supervisory staff daily.
- Number of vehicles used for the transportation of excavated Ordinary Soil should be mentioned in the record register.
